Conservative Management Failure in The Treatment of Acute Fissure-in-Ano

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ABSTRACT

Objective: To determine the frequency of conservative management failure among acute fissure-in-ano patients presenting to a tertiary care hospital.

Study design: Cross sectional observational study.

Place & Duration of study: Department of General Surgery, Unit-1, ward-3, Jinnah Postgraduate Medical Centre (JPMC) Karachi, from June 2025 to December 2025.

Methods: A total of 120 patients between 18 to 60 years of age with a clinical diagnosis of acute fissure-in-ano of less than six-weeks duration were enrolled by non-probability consecutive sampling. Patients with chronic fissure and those associated with anorectal diseases and had previous surgery were excluded. Standardized conservative management including dietary fiber supplementation, increased fluid intake, sitz baths, topical lignocaine gel application thrice a day as well as diltiazem gel 2% twice a day was advised to all the patients over a period of six weeks. The follow-up evaluation was done at week 2 and 6. Failure of treatment was considered as a continuation of symptoms with no fissure healing on local examination. The SPSS version 26 was used to analyze the data.

Results: Out of the total, 78 (65%) were male and 42 (35%) female patients with a mean age of 38.4 ± 10.2 years. The most frequent presenting complaints included painful defecation and fresh rectal bleeding. Mean baseline Visual Analogue Scale (VAS) score was7.1±1.3. In 89 (74.2%) patients fissure was completely healed at six weeks, while in 31(25.8%) symptoms persisted. Failure of treatment was more common in male patients, with a higher baseline pain score and the duration of the symptoms ($p < 0.05$). No significant conservative therapy related complications were noted.

Conclusion: In majority of the patients with acute fissure-in-ano, conservative management was effective. Non-responders should be identified early so as to avoid chronicity and a cutoff of six weeks is an ideal period.

Key words: Acute anal fissure, Conservative management, Fissure-in-ano, Diltiazem, Lignocaine.

INTRODUCTION:

An anal fissure (AF) also termed as fissure-in-ano, is a linear or oval painful linear tear or defect in the distal anal canal, starting just below the dentate line, extending to the anal verge.[1] Anal fissure is the second most common reason for proctologic consultation after hemorrhoidal disease and has a cumulative lifetime incidence of 7.8 to 11.1%. Anal pain during and after defecation, often with bright red blood loss, is the cardinal symptom of an anal fissure.[2] Most of the fissures occur in the posterior midline due to relatively reduced blood supply in this region. This predisposes the anoderm to ischemia and impaired healing.[3]

The etiology of anal fissure is multifactorial. It includes

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mechanical and functional causes. Local trauma due to the passage of hard stools, chronic constipation, persistent diarrhea, trauma during childbirth and hypertonicity of the internal anal sphincter are commonly implicated.[4] The persistent spasm of the internal anal sphincter reduces anodermal blood flow, resulting in ischemia and delayed healing, thereby maintaining a vicious cycle of pain, spasm, and further tissue injury.[5]

The first-line treatment of acute fissure-in-ano should be conservative management, with the aim to reduce the spasm of the sphincter and softening of the stool. This enhances blood flow that facilitates healing of the fissure. Recent evidence supports conservative management as an effective first-line approach with high healing rates in acute fissures.[2] This can be achieved by addition of fiber to the diet, increased fluid intake, use of stool softeners, and sitz baths.[6] Pharmacological agents like topical glycerol trinitrate, calcium channel blockers (diltiazem or nifedipine) and botulinum toxin are recommended to induce reversible chemical sphincter relaxation in patients who fail to respond to the basic conservative therapy. These agents have demonstrated significant efficacy in reducing sphincter spasm and promoting fissure healing.[7,8]

Surgical procedures such as lateral internal sphincterotomy provide high healing rates but are associated with complications including flatus or fecal incontinence. The data regarding the failure rate of conservative management in acute fissure-in-ano are limited. Understanding the frequency of treatment failure is essential for timely escalation of care, prevention of chronicity, and optimization of patient outcomes. This study was conducted to determine the frequency of conservative management failure in patients with acute fissure-in-ano at a tertiary care hospital.

METHODS:

Study design, place & duration: This was cross sectional observational study was carried out in the Department of General Surgery, unit-1, ward-3 at Jinnah Postgraduate Medical Centre Karachi, from June 2025 to December 2025.

Ethical considerations: The IRB of Jinnah Postgraduate Medical Centre, Karachi (IRB No: F.2-81/2025-GENL/444/JPMC2025) approved the study. All participants provided informed consent.

Inclusion and exclusion criteria: Patients of either sex, aged between 18-60 years, who reported to the surgical outpatient department with a clinical diagnosis of acute fissure-in-ano based upon painful defecation with or without rectal bleeding with symptoms of less than six weeks' duration were included. Patients having chronic fissure-in-ano (symptoms of more than six weeks or presence of fibrosis/sentinel pile), related anorectal diseases, past anal surgery, inflammatory bowel disease, neurological bowel disorders, pregnancy or lactation were excluded.

Sample size estimation: The WHO sample size calculator was used to compute the sample size. Based on the assumption of a managerial failure rate of 26%, a 95% percent confidence level, and a precision of 8%, 120 patients were required. Non-probability consecutive sampling was used in enrolling patients.

Study protocol: Following the ethical approval, recruitment of the eligible patients was done through consecutive sampling. Informed consent was taken in written form. An elaborate history was obtained, with emphasis on the duration of the symptoms, painful defecation, rectal bleeding, constipation, and previous treatment. General and systemic tests were undertaken. In the left lateral position, local anorectal examination was performed with the use of lignocaine gel in order to reduce discomfort. Patients were treated using a standardized conservative treatment, which consisted of dietary fiber supplement, the increase of oral fluid intake, sitz baths, topical lignocaine gel three times a day, as well as 2% diltiazem gel two times a day over six weeks. It was planned to make follow-up visits after 2 and 6 weeks. The Visual Analogue Scale (VAS) was used to measure the pain, and fissure healing by the local examination. The criteria of treatment failure were continued symptoms and non-healing fissures at six weeks. The data were noted on a pre-structured proforma.

Statistical analysis: The analysis of data were done through SPSS 26. Continuous variables were presented as mean / standard deviation, and categorical variables as frequencies and percentages. The Chi-square test and independent sample t-test were used to compare treatment failure and other variables. A p value of less than 0.05 was taken as statistically significant.

RESULTS:

A total of 120 patients with acute fissure-in-ano were included in the study. The mean age of the patients was 38.4±10.2. There were 78 (65%) males and 42 (35%) females. All patients reported painful defecation, 96 (80%) patients had fresh rectal

Table I: Factors Related to the Failure of Conservative Treatment At 6-Weeks (n=31)

Variable	Frequency (n)	Percentage (%)	p-value
Male gender	22	71.0	<0.05
High baseline VAS score	19	61.3	<0.05
Longer symptom duration	17	54.8	<0.05

bleeding, and 82 (68.3%) patients experienced constipation. The average pain at baseline, according to the Visual Analogue Scale (VAS) was 7.1±1.3.

The baseline symptomatic improvement was seen in the majority of patients at two weeks' follow-up but complete fissure healing was not evident in majority of the patients. After six weeks, 89 (74.2%) patients showed complete healing with the disappearance of pain and bleeding. The conservative treatment failed in 31 (25.8%) patients. Factors related to the failure are shown in table I.

DISCUSSION:

Acute fissure-in-ano is a common anorectal disorder that significantly affect the life of the patient. The first-line of treatment is a conservative approach especially in the acute cases. This mode of management was the focus of this study. It results in healing of the fissure in most of the patients. The objective of this approach is to reduce the internal anal sphincter spasm, improve the blood circulation so that healing can occur. In our study, conservative therapy was found to have a healing rate of 74.2%. However, 25.8% of patients did not respond within six weeks. Similar outcomes have been reported in other studies. Fritz et al reported healing of acute anal fissure in patients with conservative treatment, especially when it was administered in an early stage. [10]

Aygin et al in a systematic review noted that conservative treatment is effective in most cases of acute fissure and surgery is needed in patients with refractory disease.[11] The Lyle and Young in an updated review indicated that acute fissure responds better to conservative treatment than chronic fissures and emphasized the importance of early therapy.[12] Our study showed male predominance as well as failure of treatment in same gender. Hussain et al found a similarity in gender pattern. This may reflect delayed consultation for symptoms in female population because of inhibition.[13]

The level of baseline pain was significantly linked to failure to respond to treatment in our patients. According to Iqbal and Saeed, extreme anal sphincter tone is responsible for severe pain and hence worsening local blood flow as well as delayed healing of the fissure.[14] This is the possible pathophysiological mechanism explaining why patients presenting with intense pain are less responsive to conservative therapy. Another factor was longer duration of symptoms, which was associated with poor response. Sharma et al, showed that patients with a long period of symptoms showed much lower healing rates when using a conservative approach than those who were diagnosed early and started treatment before reaching chronic fissure.[15] Early diagnosis and early initiation of treatment are thus vital to prevent development to chronic fissure.

In our study, no major problems associated with conservative therapy were reported. Lee et al data showed that the topical diltiazem was safe and well tolerated. It caused fewer side effects than the nitrate-based preparations.[16] This reinforces the recommendation of topical diltiazem as a preferred agent in acute fissure management especially in resource-limited settings. Failure of treatment was reported by Khan et al and highlighted the importance of identifying non-responders early during the course of the disease.[17] Second-line interventions, including botulinum toxin injection, or surgery can be used in patients who do not respond to medical therapy. In selected chronic fissure cases, Shah et al demonstrated that, although non-surgical strategies can still be effective, but outcomes depend on selection of the patients and compliance to the treatment.[18] Asghar et al compared topical nifedipine and glyceryl trinitrate and found that both were effective with reasonable safety profiles.[19] This indicates that a variety of pharmacological options are available and can be used depending upon patient's tolerance and availability. Trends in colorectal practice also show a growing emphasis on conservative management of anal fissure.

Limitations of the study: This was a single center study with cross sectional design thus limiting the generalizability of the findings. The follow-up was short and recurrence rates could not be determined.

CONCLUSION:

First-line treatment of acute fissure-in-ano is the conservative management, which is effective and most of the patients show satisfactory healing. Male patients had higher baseline pain scores and were

more likely to experience treatment failure. The early detection of non-responders is necessary to avoid the development of chronic fissure.

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